I. Listing of Claims

1-108. (Cancelled)

109. (Currently Amended) The adaptive drive system of claim [[~~108~~]] 114 wherein said predetermined value varies depending on then existing operating conditions of the vehicle at said plurality of predetermined times.

110. (Previously Presented) The adaptive drive system of claim 109 wherein said operating conditions comprise one or more of vehicle speed, throttle position, steering angle, identity of an overrunning drive line, vehicle range and brake condition.

111. (Currently Amended) The adaptive drive system of claim [[~~108~~]] 114 wherein said increased engagement of said clutch is in equal amounts.

112. (Previously Presented) The adaptive drive system of claim 111 wherein said decreased clutch engagement is in equal amounts.

113. (Currently Amended) The adaptive drive system of claim [[~~108~~]] 114 wherein said clutch engagement does not increase if said speed difference is less than said predetermined value.

114. (Currently Amended) ~~The adaptive drive system of claim 108 further including~~ An adaptive drive system for a motor vehicle comprising, in combination,

a first drive line having a first drive shaft, a first differential, a first pair of axles, a first pair of wheels and at least one first speed sensor for providing a first drive line speed signal,

a second drive line having a second drive shaft, a second differential, a second pair of axles, a second pair of wheels and at least one second speed sensor for providing a second drive line speed signal,

a transfer case having an input, a first output adapted to drive said first drive line, a second output adapted to drive said second drive line and a clutch that is capable of being variably engaged and is operably disposed between said first output and said second output, wherein said clutch is capable of engagement levels between a predetermined minimum engagement and a predetermined maximum engagement, and

a microcontroller that receives said first driveline speed signal from said first speed sensor and said second driveline speed signal from said second speed sensor and determines speed differences between said first and said second speed signals at a plurality of predetermined times, wherein said speed differences may vary at said plurality of times,

wherein at one of said plurality of predetermined times said clutch engagement increases if a speed difference is greater than a predetermined value and said clutch engagement is less than the predetermined maximum engagement level at said one of said plurality of predetermined times, wherein said predetermined value may vary at said plurality of predetermined times, and wherein at another of said plurality of predetermined times said clutch engagement decreases if said speed difference is less than another predetermined value and said clutch engagement is greater than said predetermined minimum engagement level at said another of said plurality of predetermined times; and

a throttle position sensor providing a signal to said microcontroller and wherein said predetermined value is reduced in magnitude as said signal from said throttle position sensor increases.

115. (Currently Amended) The adaptive drive system of claim [[~~108~~]] 114 wherein said speed signals represent an average speed of an associated said pair of wheels.

116. (Currently Amended) The adaptive drive system of claim [[~~108~~]] 114 wherein said clutch is engaged to at least a minimum level of engagement at said plurality of predetermined times.

117. (Currently Amended) ~~The adaptive drive system of claim 115 wherein~~ An adaptive drive system for a motor vehicle comprising, in combination,

a first drive line having a first drive shaft, a first differential, a first pair of axles, a first pair of wheels and at least one first speed sensor for providing a first drive line speed signal,

a second drive line having a second drive shaft, a second differential, a second pair of axles, a second pair of wheels and at least one second speed sensor for providing a second drive line speed signal,

a transfer case having an input, a first output adapted to drive said first drive line, a second output adapted to drive said second drive line and a clutch that is capable of being variably engaged and is operably disposed between said first output and said second output, wherein said clutch is capable of engagement levels between a predetermined minimum engagement and a predetermined maximum engagement, and

a microcontroller that receives said first driveline speed signal from said first speed sensor and said second driveline speed signal from said second speed sensor and determines speed differences between said first and said second speed signals at a plurality of predetermined times, wherein said speed differences may vary at said plurality of times,

wherein at one of said plurality of predetermined times said clutch engagement increases if a speed difference is greater than a predetermined value and said clutch engagement is less than the predetermined maximum engagement level at said one of said plurality of predetermined times, wherein said predetermined value may vary at said plurality of predetermined times, and wherein at another of said plurality of predetermined times said clutch engagement decreases if said speed difference is less than another predetermined value and said clutch engagement is greater than said

predetermined minimum engagement level at said another of said plurality of predetermined times;

wherein said speed signals represent an average speed of an associated said pair of wheels; and

wherein said microcontroller reduces said predetermined value as said predetermined minimum clutch engagement is increased.

118. (Currently Amended) The adaptive drive system of claim [[~~108~~]] 114 wherein said clutch is a friction clutch pack having a plurality of interleaved discs.

119. (Currently Amended) The adaptive drive system of claim [[~~108~~]] 114 further including a ball ramp actuator.

120. (Cancelled)

121. (Cancelled)

122. (Previously Presented) The adaptive drive system of claim 143 wherein said decreased engagement of said clutch occurs in steps when said speed difference does not exceed said predetermined value during said predetermined time intervals.

123. (Currently Amended) The adaptive drive system of claim [[~~121~~]] 129 or 122 wherein said steps are of equal magnitude.

124. (Currently Amended) The adaptive drive system of claim [[~~121~~]] 129 or 122 wherein said steps are of equal duration.

125. (Currently Amended) The adaptive drive system of claim [[~~120~~]] 129 wherein said clutch is engaged to at least a minimum level of engagement during said predetermined [[~~times~~]] time intervals.

126. (Currently Amended) The adaptive drive system of claim [[~~120~~]] 129 herein said clutch is provided with at least a minimum level of engagement during said predetermined times intervals and wherein engagement of said clutch does not increase if a difference between speeds of said drivelines is less than said predetermined value during said predetermined time intervals.

127. (Previously Presented) The adaptive drive system of claim 125 wherein said predetermined value at said predetermined time intervals may vary based on operating conditions including at least one of throttle position, vehicle speed, steering angle; brake condition; and identity of an overrunning driveline.

128. (Cancelled)

129. (Currently Amended) ~~The adaptive drive system of claim 121~~ An adaptive drive system for a motor vehicle comprising, in combination,

a first drive line having a first differential, a first pair of axles, a first pair of wheels and at least one first drive line speed sensor,

a second drive line having a second differential, a second pair of axles and a second pair of wheels and at least one second drive line speed sensor,

a clutch operably disposed between said first drive line and said second drive line, and

a microcontroller that compares speed data from said first and said second drive line speed sensors during predetermined time intervals and wherein engagement of said clutch increases if a difference between speeds of said drivelines is greater than a predetermined value during said predetermined time intervals;

wherein said increased engagement of said clutch occurs in steps when said speed difference exceeds said predetermined value during said predetermined time intervals; and

wherein the magnitude of said steps are a function of one of throttle position and brake system activation.

130. (Currently Amended) The adaptive drive system of claim [[~~120~~]] 129 wherein said clutch is a friction clutch pack having a plurality of interleaved discs.

131. (Previously Presented) The adaptive drive system of claim 130 further including a ball ramp actuator.

132. (Cancelled)

133. (Currently Amended) An adaptive drive system for a motor vehicle of claim [[~~132~~]] 136 wherein said clutch is a friction clutch pack having a plurality of interleaved discs.

134. (Previously Presented) An adaptive drive system for a motor vehicle of claim 133 further including a ball ramp actuator having an electromagnetic coil.

135. (Cancelled)

136. (Currently Amended) ~~An adaptive drive system for a motor vehicle of claim 135~~ An adaptive drive system for a motor vehicle comprising, in combination,

a first drive line having a first drive shaft, a first differential, a first pair of axles, a first pair of wheels and at lease one first speed sensor for providing a first drive line speed signal,

a second drive line having a second drive shaft, a second differential, a second pair of axles, a second pair of wheels and at least one second speed sensor for providing a second drive line speed signal,

a transfer case having an input, a first output adapted to drive said first drive line, a second output adapted to drive said second drive line and a clutch that is capable of being variably engaged and is operably disposed between said first output and said second output, and

a microcontroller that receives said first driveline speed signal from said first speed sensor and said second driveline speed signal from said second speed sensor and then determines a speed difference between said first and said second speed signals at predetermined times,

and wherein said clutch engagement increases if said speed difference is greater than a predetermined value at said predetermined times and said clutch engagement decreases if said speed difference is less than another predetermined value at another of said predetermined times;

wherein said clutch is engaged to at least a minimum level of engagement during said predetermined times; and

wherein said microcontroller determines said minimum level of clutch engagement in response to a signal from a throttle position sensor.

137. (Currently Amended) An adaptive drive system for a motor vehicle of claim [[~~132~~]] 136 wherein said increased engagement of said clutch occurs in steps when said speed difference exceeds said predetermined value during said predetermined times.

138. (Currently Amended) An adaptive drive system for a motor vehicle of claim [[~~132~~]] 136 wherein said decreased engagement of said clutch occurs in steps when said speed difference does not exceed said ~~second~~ predetermined value during said predetermined time intervals.

139. (Previously Presented) An adaptive drive system for a motor vehicle of claim 137 wherein said steps are equal in magnitude.

140. (Previously Presented) An adaptive drive system for a motor vehicle of claim 138 wherein said steps are equal in magnitude

141. (Currently Amended) An adaptive drive system of claim [[~~108~~]] 114 further including a ball ramp actuator and an electromagnetic coil.

142. (Cancelled)

143. (Currently Amended) An adaptive drive system of claim [[~~108~~]] 114 wherein said predetermined value and said another predetermined value are different.

144. (Currently Amended) The adaptive drive system of claim [[~~112~~]] 114 wherein said amounts of increased and decreased engagement may vary or are equal.

145. (Currently Amended) The adaptive drive system of claim [[~~120~~]] 129 wherein engagement of said clutch decreases if a difference between speeds of said drivelines is less than said predetermined value during said predetermined time intervals.

146 (Currently Amended) The adaptive drive system of claim [[~~132~~]] 136 wherein said predetermined value and said another predetermined value are the same.

147. (Currently Amended) The adaptive drive system of claim [[~~132~~]] 136 wherein said predetermined value and said another predetermined value are different.